

October 5, 1944

Dr. Warren Weaver  
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Dear Warren:

I was very glad to receive your letter of September 21, and to know that you are interested in the proposal made in my letter of August 18.

I have been thinking about the points which you raised, and, in accordance with your suggestion that the correspondence be not delayed, I would have answered after a few days, except that for over a week I have been enthusiastically investigating a method for obtaining information about the structure of proteins which, although not new, has never before been used effectively. This method consists in the determination of the adsorption isotherms of water vapor on the proteins. I have found that the data in the literature, such as those published recently by Henry Bull, can be subjected to a theoretical analysis which leads to very definite conclusions about the way in which the amino acid residues interact with water molecules. It seems clear that more precise experimental data would, with this method of interpretation, yield very interesting information about the structure of proteins, supplementing that obtained by other methods.

I agree with your statement that there may well be more demand for well trained young scientists than scientists to fill the jobs after the war. On the other hand, I believe that it will be possible for us to find a number of energetic and able young men who are sufficiently interested in the fundamental problems of science to be glad to have the opportunity of taking part in a research project which promises to yield many important contributions to science. There may be some difficulty in building up a research group, because of the demand of university teaching and industrial research; I think, however, that the period at the end of the war will be a very good one for forming this group, because of the fact that we are now getting acquainted with a large number of young men, and we should be able to make a very good selection from among them, provided that we are able to attract them into this activity.

Dr. Corey and I have fifty young men and women working on our NDRC project. Of these, fifteen or twenty have the properties desirable for employment on the proposed program of fundamental research, and a number of these might be interested in participating in this program. Some of the workers would presumably be obtained from other projects and other institutions.

If it turns out that there is no surplus of trained investigators available after the war, it might be wise to plan to carry out the program outlined in my earlier letter over a period of about six years, rather than three years.

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I believe that the techniques which have been developed for the study of proteins and related substance, but have not yet been effectively applied to the problems because of the great amount of labor involved, are such as to justify a program involving the expenditure of between \$25,000 and \$40,000 a year for several years, in addition to the salaries of the principal investigators.

The techniques have been developed to such a point that the work could, I believe, be pushed forward at a rather rapid rate without loss of efficiency. If the work were to be spread over six or eight years rather than to be concentrated into three or four years the total funds expended might be used somewhat more effectively. However, I would prefer to have the work done as rapidly as possible; I am enthusiastic to learn the answers to the most interesting questions posed for us by Nature, and I am afraid that unless a very intensive attack is made on these problems the answers may not be found during our lifetime.

There may be an argument in favor of an intensive attack, by many methods, on the protein problem. I do not believe that any one method of investigation will alone provide the solution of this problem. Instead it is, I think, probable that hints about the solution will be given by the results of many methods of investigation, and that the final synthesis of these hints will be made by workers who are familiar with all of the methods and all of the results. This accomplishment may then be expected only when a broad as well as intensive attack on the problem is being made.

The institutional cooperation which may be expected would comprise, I think, the services of Dr. Robert B. Corey, Dr. Verner Schomaker, and myself as principal investigators, and the sum of \$5,000 annually (for molecular structure research) which has been provided by the Institute during the past ten years. We have laboratory space and facilities for fifteen investigators, without crowding, in addition to the anticipated number of graduate students and other normal research men.

The development of our understanding of the fundamental physical and chemical basis of physiological processes, for which there is such an immediate human need, will, I believe, proceed with a rapidity incomparably greater after such a program as that proposed has been carried to a successful conclusion than without the results of this program.

I shall look forward to your letter.

Sincerely yours,

Linus Pauling

LP:js